



SDMS Doc ID 2019531

ROCKETDYNE

SPECIAL DEVICES

CAPABILITIES

OCTOBER, 1960



ROCKETDYNE

A DIVISION OF NORTH AMERICAN AVIATION, INC.

CANOGA PARK, CALIFORNIA

RESEARCH DEPARTMENT FACILITIES

The programs described herein were conducted by personnel of the Research Department at the Propulsion Field Laboratory located at a remote site in the Santa Susana Mountains near Canoga Park, California. This 2000-acre complex is the Free World's largest rocket development and testing installation and is the site of the extensive facilities of the Research Department. The research activities center around the recently constructed Research Center which contains approximately 20,000 sq. ft. of office space, and laboratories for chemical, optical, acoustic, combustion and instrumentation research. Additional facilities are used for research in heat transfer, fluid transport, ion propulsion, solid and liquid propellants and explosive forming.

A portion of the facilities at the Propulsion Field Laboratory are shown in the Figure. The research center and laboratories are the first buildings on the right-hand side of the picture.

The following facilities are utilized by the Research Department:

Research Center

Office Space (20,000 sq. ft.)
Chemical & Physical Laboratories (4,800 sq. ft.)

Chemical Engineering Laboratories

Hazardous Chemical Laboratories (1,000 sq. ft.)
Test Bays (6) - (9 x 9 ft. sq.)

Experimental Chemistry Laboratory

(900 sq. ft. + 390 sq. ft. sheltered area)

Solid Propellant Research Facility

Propellant Formulation Laboratory (1,600 sq. ft.)
Propellant Mixing Bays (2) - (12 x 16 ft.)
Physical Properties Laboratory (650 sq. ft.)
Polymer Laboratory (650 sq. ft.)
Igniter Development and Fabrication (1500 sq. ft.)
Pressed Charge Building (400 sq. ft.)
Igniter Test Bays (4) - (10 x 10 ft.)
Continuous Processing Building (800 sq. ft.)
Polymer Pilot Plant (800 sq. ft.)

Solid Propellant Test Facility

Free Flight Tunnel (110 ft. long)
 Test Firing Bays (2) - (10 x 10 ft.)
 Shops and Control Center (1400 sq. ft.)
 Round Ready Storage Building (360 sq. ft.)
 Storage Magazines - Solid Propellants (200 sq. ft.)
 Igniter (320 sq. ft.)

Propulsion Research Area (Liquid Propellant)

Test Stands	4 - 20,000 lb. thrust
	1 - 30,000 lb. thrust
	1 - 5,000 lb. thrust
	2 - 1,000 lb. thrust
	1 - 500 lb. thrust

Shops and Control Center

Propellant Handling and Test Equipment

Fluid Transport Research Area (Pump and Turbine Work)

Labs and Shop (2000 sq. ft.)

Heat Transfer Facility

Test Bays (4) - (10 x 15 ft.)
 Shop and Control Center (1000 sq. ft.)

Electrical Propulsion Lab (1600 sq. ft.)

Instrumentation Laboratories (500 sq. ft.)

Explosive Forming Facility

Firing Pits (5) - Assorted Sizes
 Shop and Metallurgical Laboratory (2000 sq. ft.)
 Firing Bays (2) - (6 x 8 ft. + attached 200 sq. ft. shop)
 Explosives and Initiator Magazines (Storage and Ready)

ROCKETDYNE

INTER-OFFICE LETTERS ONLY

TO R. J. Madden DEPARTMENT 552 - SanSu

FROM E. G. Addeo DEPARTMENT 552 - SanSu

PHONE 520 DATE 1 March 1960

SUBJECT MONTHLY REPORT - FEBRUARY, 1960; CHEMICAL DISPOSAL - ACTIVITIES AT PITS, INSPECTIONS BURNING, CONVOYING, ETC.

The following is a resume of time consumed during various activities at the Chemical Disposal Pits.

CHEMICALS AND/OR FUELS DISPOSED OF	AMOUNTS	FROM WHICH TEST AREA	DISPOSAL AUTHORIZED BY
Heptane	1,000 Gal.	Quick Mix	E. L. Alexander 596-395
RP-1	165 Gal.	Research	Bud Nelson 596-5
JP-4	110 Gal.	Dept. 56	Bud Nelson 596-5
Hydraulic Oil	385 Gal.	Delta	Bud Nelson 596-5
Triethylamine	55 Gal.	SPA	Bud Nelson 596-5
Unidentified Fuels	110 Gal.	SPA	Bud Nelson 596-5
Trichlorethylene - Contaminated	55 Gal.	Area Unknown	Bud Nelson 596-5
Ammonium Perchlorate	55 Gal.	NAKA	Bud Nelson 596-5
Lab. Chemicals and/or			
Fuel Samples	15 Gal.	Chem. Lab. "B"	Bud Nelson 596-5
Solid Propellant	300 Lbs.	NAKA Area and	
		Quick Mix Area	E. L. Alexander 596-395
Fluorine (3 cylinders)	18 Lbs.	Research Area	Bud Nelson 596-5

Grand Total Gallons Burned - 1950 gallons
 Grand Total Pounds Burned - 318 pounds
 Grand Total Cylinders Bled - 3 cylinders - 18 pounds

TIME CONSUMED:

Inspections:

F/E Addeo 2 hours
 J. S. Gurican 6 hours
 E. Webb 2 hours

TOTAL 10 hours TOTAL TIME - 10 hours

Burning:

F/E Addeo 5 hours
 J. Gurican 8 hours
 E. Webb 8 hours

TOTAL 21 hours TOTAL TIME - 21 hours

Drum Removal:

J. Gurican 2 hours
 E. Webb 2 hours

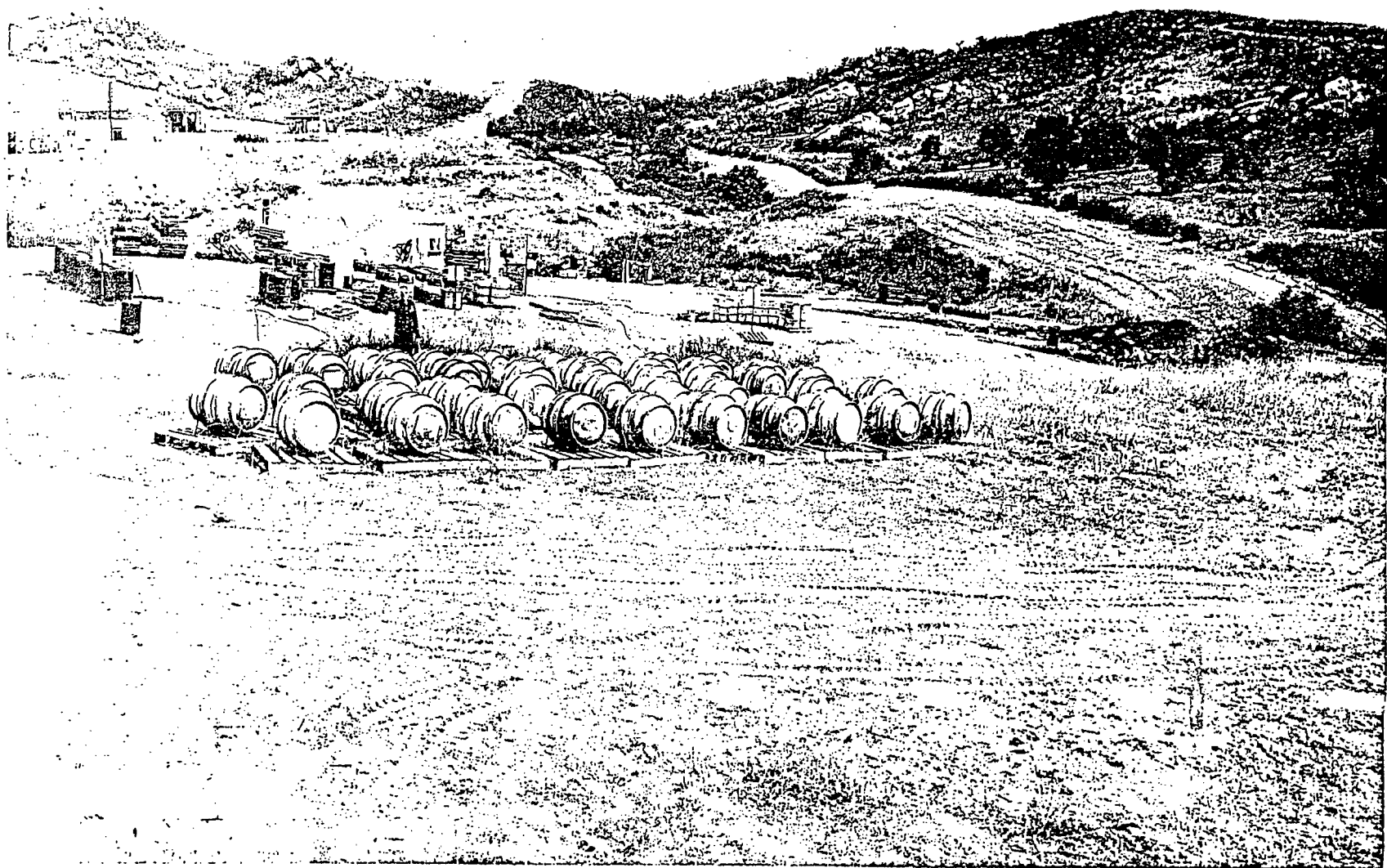
TOTAL 4 hours TOTAL TIME - 4 hours

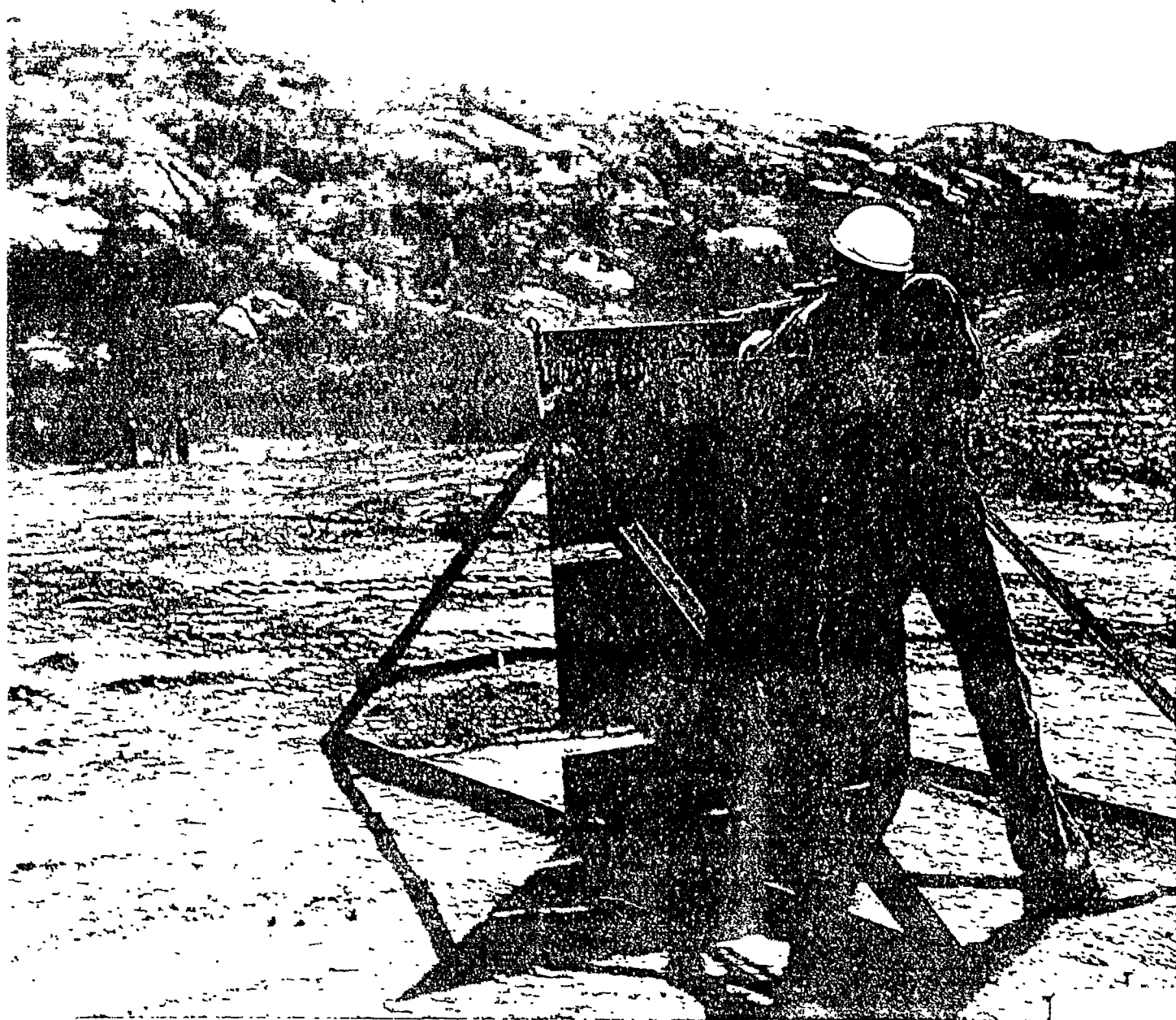
MATERIAL ON HAND AWAITING DISPOSAL:

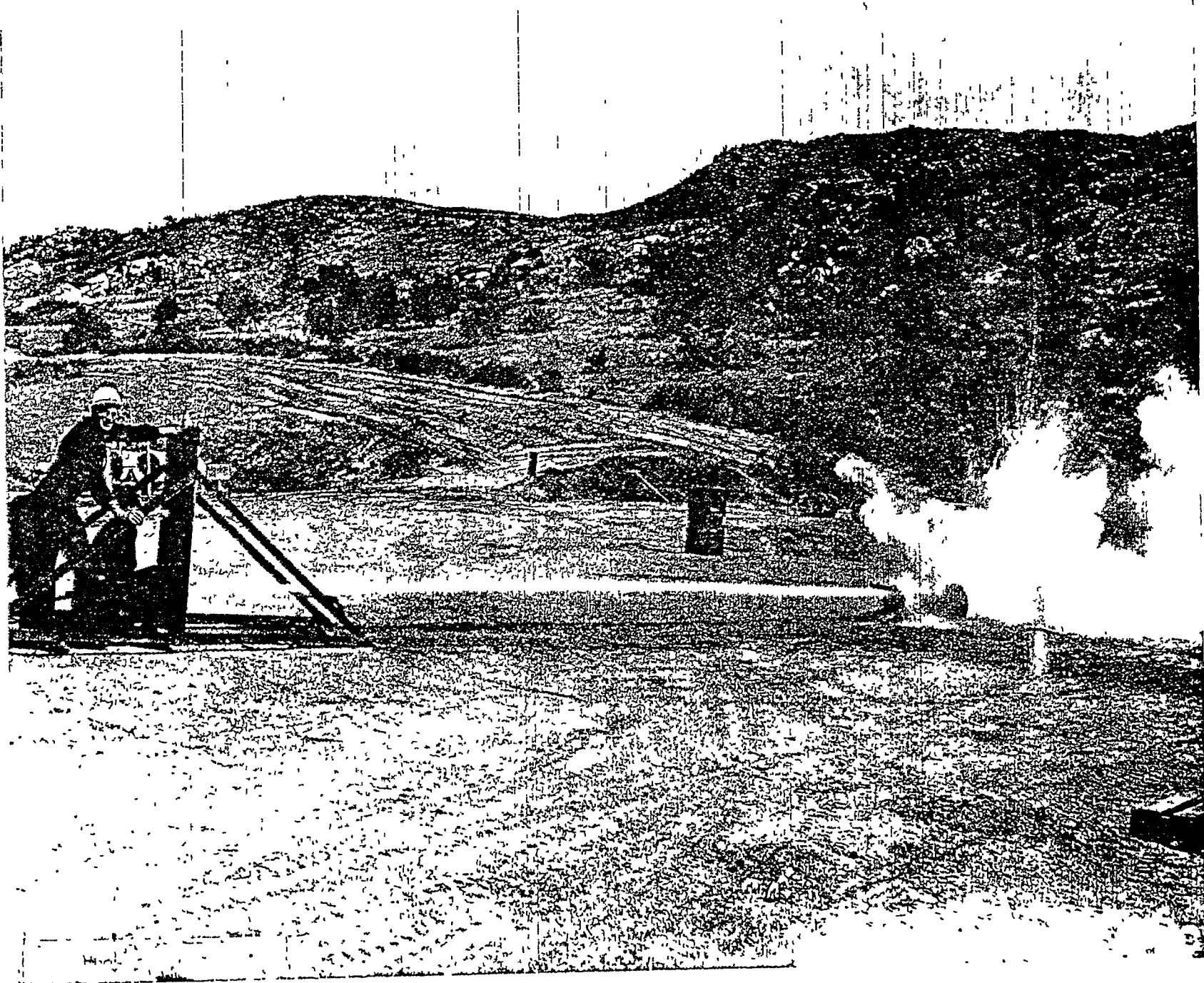
None

EQA:adh

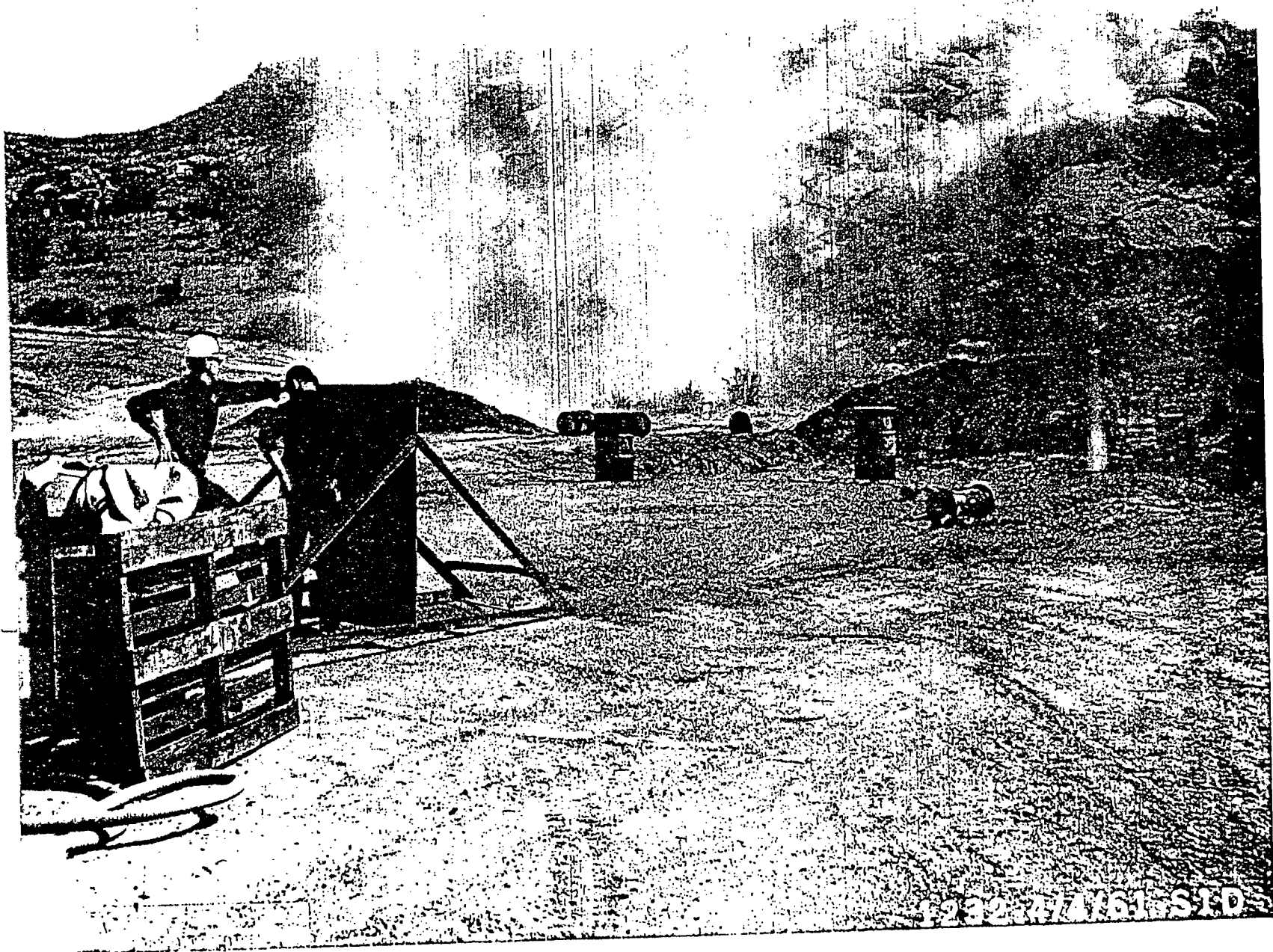
E. G. Addeo
 Fire Engineer, Inspection



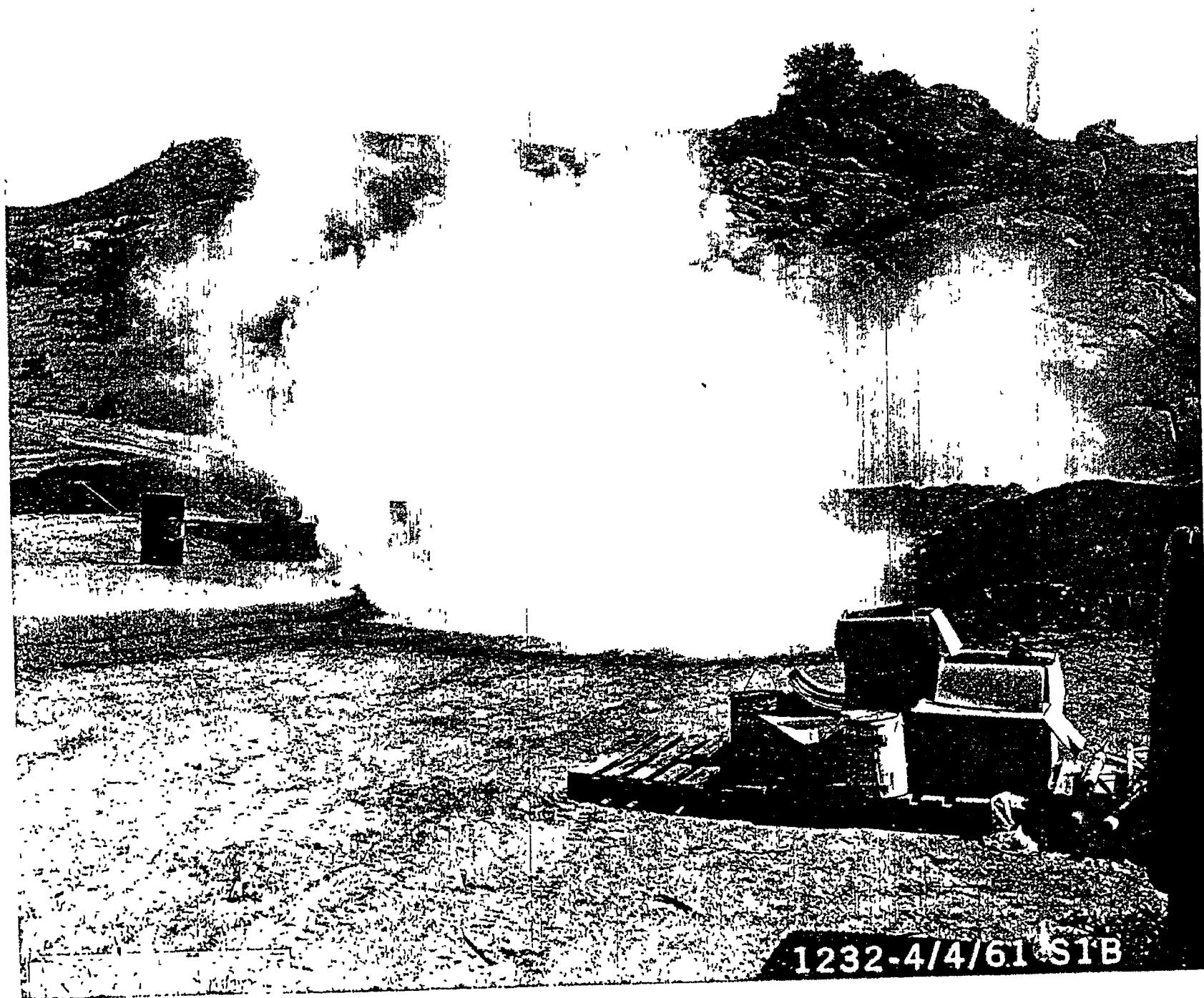








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Winston H. Hickox
Secretary for
Environmental
Protection

California Regional Water Quality Control Board

Los Angeles Region

Over 50 Years Serving Coastal Los Angeles and Ventura Counties

Recipient of the 2001 Environmental Leadership Award from Keep California Beautiful

320 W. 40th Street, Suite 200, Los Angeles, California 90013

Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: <http://www.swrcb.ca.gov/rwqcb4>



Gray Davis
Governor

December 23, 2002

Mr. Steve Lafflam
The Boeing Company
Rocketdyne Propulsion and Power
8633 Canoga Avenue MC T4-87
P.O. Box 7922
Canoga Park, CA 91309-7922

Certified Mail
Return Receipt Requested
No. 7002 0860 0006 4859 0278

CALIFORNIA WATER CODE SECTION 13267, REQUEST FOR HISTORICAL AND CURRENT SITE INFORMATION, AND ADDITIONAL INVESTIGATION - BOEING SANTA SUSANA FIELD LABORATORY, TOP OF WOOLSEY CANYON ROAD, UNINCORPORATED VENTURA COUNTY, CALIFORNIA

Dear Mr. Lafflam:

The California Regional Water Quality Control Board (Regional Board), Los Angeles Region, is the public agency with primary responsibility for the protection of ground and surface water quality for all beneficial uses within the coastal watersheds of Los Angeles and Ventura Counties, including the referenced site. The Boeing Santa Susana Field Laboratory (SSFL) is currently performing assessment, monitoring, and cleanup under a stipulated enforcement order with the Department of Toxic Substances Control (DTSC). In 1999, perchlorate in trace concentrations was detected in shallow groundwater dewatering and monitoring wells in the City of Simi Valley. Since that time, the City of Simi Valley, the United States Environmental Protection Agency, the DTSC, and the Regional Board have been working together to evaluate the extent and nature of the perchlorate pollution in the City of Simi Valley, and at the SSFL site.

Perchlorate and other contaminants occur in soil, groundwater, and surface water on, and beneath, the SSFL site. Perchlorate pollution at concentrations over 600 micrograms per liter ($\mu\text{g/L}$) have been detected in on-site groundwater monitoring wells, and perchlorate concentrations as high as 17 $\mu\text{g/L}$ have been detected in stormwater leaving the property. In areas with elevated perchlorate concentrations in groundwater (well RD-10), the vertical and lateral extent of perchlorate pollution has not been fully determined. In the deepest sampling interval of well RD-10 (in the Chatsworth Formation between 391 and 401 feet below ground surface), perchlorate was detected at greater than 100 $\mu\text{g/L}$, when sampled in June 2002. Historically, activities with the potential to release perchlorate to the environment at SSFL included the testing of solid fuel rocket engines and other devices at the site. Current activities with the potential to mobilize perchlorate to the environment at SSFL include groundwater, surface water sources, (e.g., ponds and stormwater), and wastewaters generated at SSFL (e.g., NPDES discharges and groundwater treatment systems discharges).

Based on the persistent and highly mobile nature of the perchlorate, soil conditions, the depth to groundwater, and the available analytical data, the previous unauthorized release of perchlorate at the site has contaminated soil, groundwater, and surface water. Pursuant to section 13267 of the

California Environmental Protection Agency

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
For a list of simple ways to reduce demand and cut your energy costs, see the tips at: <http://www.swrcb.ca.gov/news/challenge.htm>



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Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

Mr. Steve Lafflam
The Boeing Company

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December 23, 2002

California Water Code, you are hereby directed to submit a technical report containing historical and current site information, to be used to determine the specific source or sources of the perchlorate detected in soil, groundwater, and surface water on, and in the vicinity of SSFL. In addition, you are required to determine the distribution of perchlorate in the soil of all surface water drainages that have not been investigated to date, to determine the distribution of perchlorate in surface water, wastewaters, ponds, and waterways on the property, and to monitor perchlorate leaving the property during storms and other periods of waste discharge. Your efforts must be documented in technical reports. The required information and technical reports must be submitted to the Regional Board and the DTSC in accordance with the schedule specified below:

1. A source evaluation report shall be prepared and submitted by **February 1, 2003**, for our review and evaluation. A copy of the technical report shall also be sent to DTSC. The report shall, at a minimum, include the following:
 - a. Property ownership and land use history from original land grant;
 - b. Locations where perchlorate was used and stored on-site;
 - c. Location and time specific quantities of perchlorate used;
 - d. Management procedures for the use of perchlorate and perchlorate wastes used and/or generated on-site;
 - e. Copies of material safety data sheets for perchlorate and related chemicals used and/or stored at the site;
 - f. Copies of permits and violations issued to the facility by the Regional Board and other regulatory agencies;
 - g. Mitigation measures or corrective actions, if any notice of violation was issued; and
 - h. A summary of all existing soil, groundwater, and surface water (e.g., ponds and stormwater), wastewater sampling perchlorate data (e.g., NPDES discharges and groundwater treatment system discharges).
2. A workplan to include a sampling and analysis protocol for perchlorate testing of all potential surface water, wastewater discharges, ponds, throughout the site, shall be submitted by **February 1, 2003**, for our review and approval.
3. Following approval of the workplan the required sampling shall be conducted by or directly under the supervision of qualified professionals.
4. A detailed report summarizing the results of all soil and groundwater sampling conducted to date for perchlorate at SSFL. Data collected during prior soil and groundwater investigations shall be submitted with the report. The technical report shall also include conclusions based upon the test results on the nature and extent of perchlorate pollution at the SSFL and recommendations for any supplemental hydrogeologic investigations needed to fully define the lateral and vertical extent of perchlorate pollution.

Pursuant to section 13268 of the California Water Code, failure to submit the required technical reports or documents by the due dates may result in civil liability penalties administratively imposed upon you by the Regional Board in an amount up to one thousand dollars (\$1,000) for each day the report or document is not received.

California Environmental Protection Agency

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Mr. Steve Laffam
The Boeing Company

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December 23, 2002

Should you have any questions, please contact Dr. Rebecca Chou at (213) 576-6733, or Mr. Peter Raftery at (213) 576-6724.

Sincerely,

for **Dennis A. Dickerson**, AEO
Dennis A. Dickerson
Executive Officer

cc: Michael Lauffer, Office of the Chief Counsel, State Water Resources Control Board
Robert Sams, Office of the Chief Counsel, State Water Resources Control Board
Regional Board Members
The Honorable Steve Bennett, Ventura County Board of Supervisors
The Honorable John Flynn, Ventura County Board of Supervisors
The Honorable Kathy Long, Ventura County Board of Supervisors
The Honorable Judy Mikels, Ventura County Board of Supervisors
The Honorable Frank Schillo, Ventura County Board of Supervisors
Jim Pappas, DTSC, Sacramento
Gerard Abrams, DTSC, Sacramento
Denise Krueger, Southern California Water Company
Dr. Lowell Preston, Ventura County Public Works Agency
Mr. Guy Gniadek, Ahmanson Land Company

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